

**DSIRE™**

*Database of State Incentives for Renewables & Efficiency*

U.S. DEPARTMENT OF  
**ENERGY**

Energy Efficiency &  
Renewable Energy

**IREC**  
INTERSTATE RENEWABLE ENERGY COUNCIL

  
NORTH CAROLINA  
Solar Center

# Introduction to DSIRE

Amy Heinemann  
North Carolina Solar Center/DSIRE  
May 8, 2012

# DSIRE™

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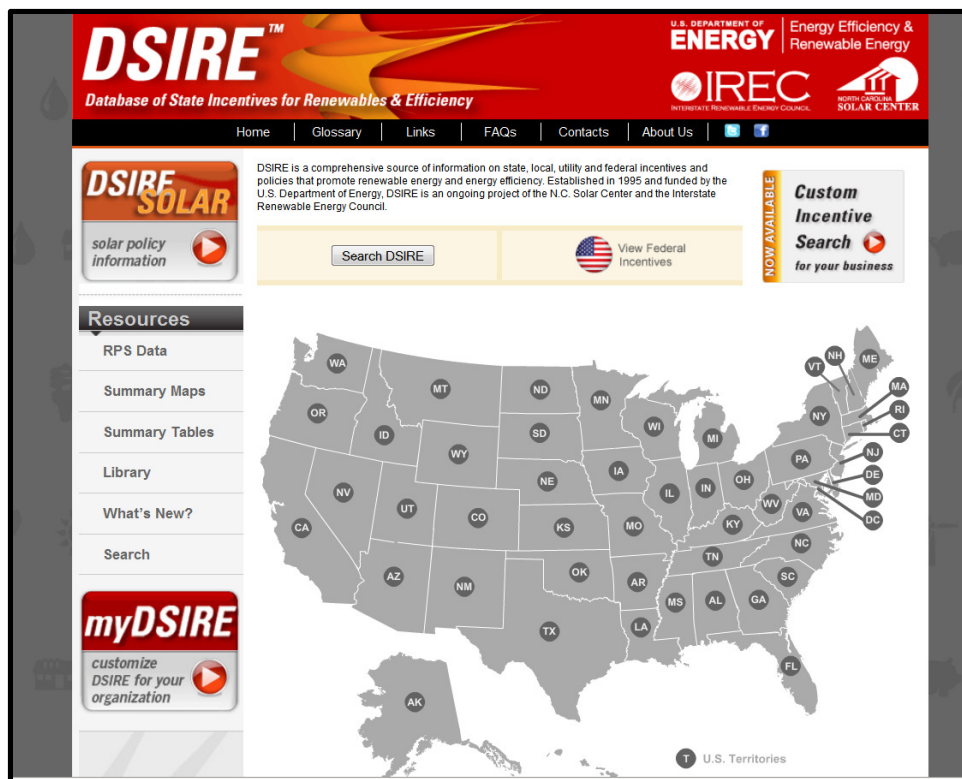
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## Background



- Created by the NC Solar Center in 1995
- Funded by the US DOE (EERE)
- Administered by NREL
- Approximately 2,700 entries
- Renewable energy and energy efficiency
- Rules, regulations, policies, and incentives
- Approximately 170,000 unique visitors/month

# Database Content

- All **State** incentives and policies – including DC and territories
- All **Federal** incentives and policies
- Most **Utility** incentives
- Some **Local** policies and incentives – examples and largest cities/counties



## Database Content

### Incentives

Green Building Incentives

Industry Recruitment/Support

Leasing Programs

#### ***Rebate Programs***

PACE Financing

#### ***Performance-Based Incentives***

Property and Sales Tax Incentives

#### ***Grant Programs***

Loan Programs

#### ***Corporate and Personal Tax Incentives***

### Rules, Regulations, Policies

Appliance/Equipment Efficiency Standards

Building Energy Codes

Contractor Licensing

Energy Efficiency Resource Standards

Energy Standards for Public Buildings

Generation Disclosure Requirements

#### ***Interconnection***

#### ***Net Metering***

Public Benefits Fund

Renewables Portfolio Standard

Solar/Wind Access Policy

Solar/Wind Permitting Standards

Line Extension Analysis

# Not Found in DSIRE

- Private foundation grant opportunities
- Research and development (R&D) incentives
- Commercialization incentives
- Demonstration projects
- One-time grants or RFPs



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## Tips

- Click on a state to browse
- Use the search function to find a specific incentive type
- Always check expiration dates, date of last review, and the program website

The screenshot shows the DSIRE website's search interface. At the top is the DSIRE logo and tagline. Below this is a navigation bar with links: Home, Staff, Glossary, Links, FAQs. The main content area is divided into two columns. The left column contains a 'DSIRE SOLAR' section with a play button icon and a 'Resources' section with links to RPS Data, Summary Maps, Summary Tables, Library, and What's New?. The right column is titled 'SEARCH' and contains a text box for creating a custom summary, a section for choosing databases to search (Renewable Energy and Energy Efficiency are both checked), and five dropdown menus for selecting an Eligible Sector, State/Territory, Technology, Implementing Sector, and Incentive/Policy Type. A 'Click Here to Search' button is at the bottom of the search section. At the bottom left of the page is a 'myDSIRE' logo.

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## RESULTS!

- Search for Incentives for Renewable Energy and Energy Efficiency in “District of Columbia” for “Local Governments”
- Pare down the list by further limiting the criteria to efficiency or renewables or for a specific technology (e.g., PV, Lighting)

The screenshot displays the DSIRE website interface. On the left, a sidebar contains the 'DSIRE SOLAR' logo, a 'solar policy information' button, a 'Resources' menu with options like 'RPS Data', 'Summary Maps', 'Summary Tables', 'Library', and 'What's New?', a 'Search' button, and the 'myDSIRE' logo. The main content area is titled 'DISTRICT OF COLUMBIA Incentives/Policies for Renewables & Efficiency'. It features three links: 'See Federal Incentives', 'See All Summaries', and 'See Residential Incentives Only'. Below these are sections for 'Financial Incentives' (including Federal Grant and Loan Programs), 'Performance-Based Incentive', 'Rules, Regulations & Policies', and 'Interconnection'.

**DSIRE SOLAR**  
solar policy information

**Resources**  
RPS Data  
Summary Maps  
Summary Tables  
Library  
What's New?  
Search

**myDSIRE**

**DISTRICT OF COLUMBIA**  
Incentives/Policies for Renewables & Efficiency

[See Federal Incentives](#)  
[See All Summaries](#)  
[See Residential Incentives Only](#)

**Financial Incentives**

**Federal Grant Program**

- [USDA - High Energy Cost Grant Program](#) *Federal*
- [USDA - Rural Energy for America Program \(REAP\) Grants](#) *Federal*

**Federal Loan Program**

- [Clean Renewable Energy Bonds \(CREBs\)](#) *Federal*
- [Qualified Energy Conservation Bonds \(QECBs\)](#) *Federal*
- [U.S. Department of Energy - Loan Guarantee Program](#) *Federal*

**Performance-Based Incentive**

- [District of Columbia Public Service Commission - Solar Renewable Energy Certificates](#)

**Rules, Regulations & Policies**

**Interconnection**

- [Interconnection Standards](#)
- [Interconnection Standards for Small Generators](#) *Federal*

# DSIRE<sup>TM</sup>SOLAR

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[Home](#)[Team](#)[Glossary](#)[Links](#)[FAQs](#)[Contacts](#)[About Us](#)

## DSIRE

renewables &  
efficiency



### Resources

[Solar Policy News](#)[Solar Policy Guide](#)[Policy Comparisons](#)[Summary Maps](#)[Library](#)[Search](#)

## myDSIRE

customize  
DSIRE for your  
business



DSIRE Solar provides comprehensive information on state, local, utility, and federal incentives and policies that promote solar energy. Funded by the U.S. Department of Energy's Solar Energy Technologies Program, DSIRE Solar provides solar-specific policy information to consumers, policy makers, businesses, utilities, researchers and other stakeholders.

Search for incentives for one or both:



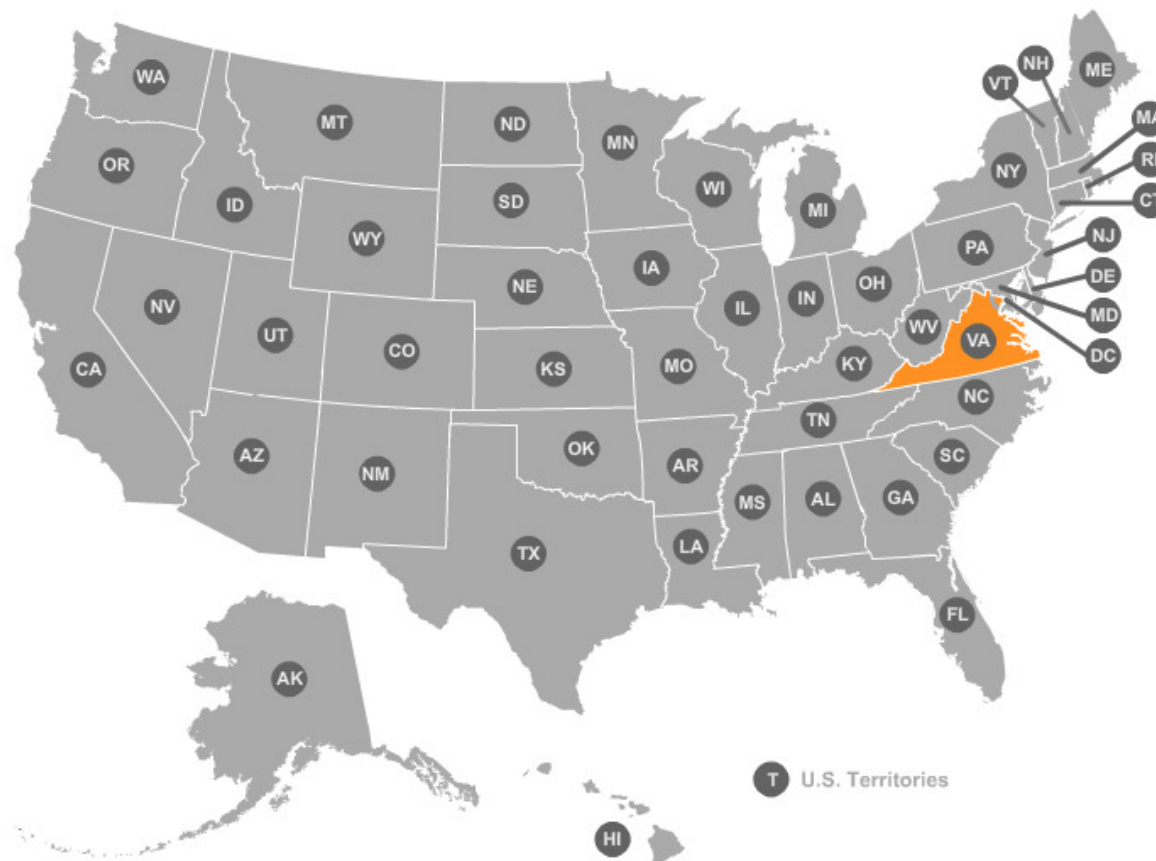
Solar Electric



Solar Thermal



View Federal  
Solar Incentives



# Federal Investment Tax Credit (ITC)

- **30%** of the system cost (includes installation costs), with no cap
- Eligible technologies: PV, solar water heat, wind (100 kW max), fuel cells, geothermal heat pumps, geothermal electric (commercial), microturbines (comm), CHP (comm)
- Expires December 31, 2016
- AMT, subsidized energy financing = okay
- Cash grants in lieu of tax credit available for **commercial** property placed in service, or where construction began, in 2009, 2010 and 2011

# Direct Cash Incentives

- Grants, rebates, and performance-based incentives
- All sectors usually eligible for any programs for electric or gas ratepayers (SBC, EEPS, RPS charges)
- Renewable energy programs sometimes offer higher incentives to gov't/nonprofits to offset lack of access to tax credits
- RE Structure: \$/W, \$/kWh, \$/Annual kWh (or therms)
- EE Structure: \$/system or \$/Annual kWh (or therms)
- Many programs offer technical assistance services, subsidized energy audits, special assistance for small projects.

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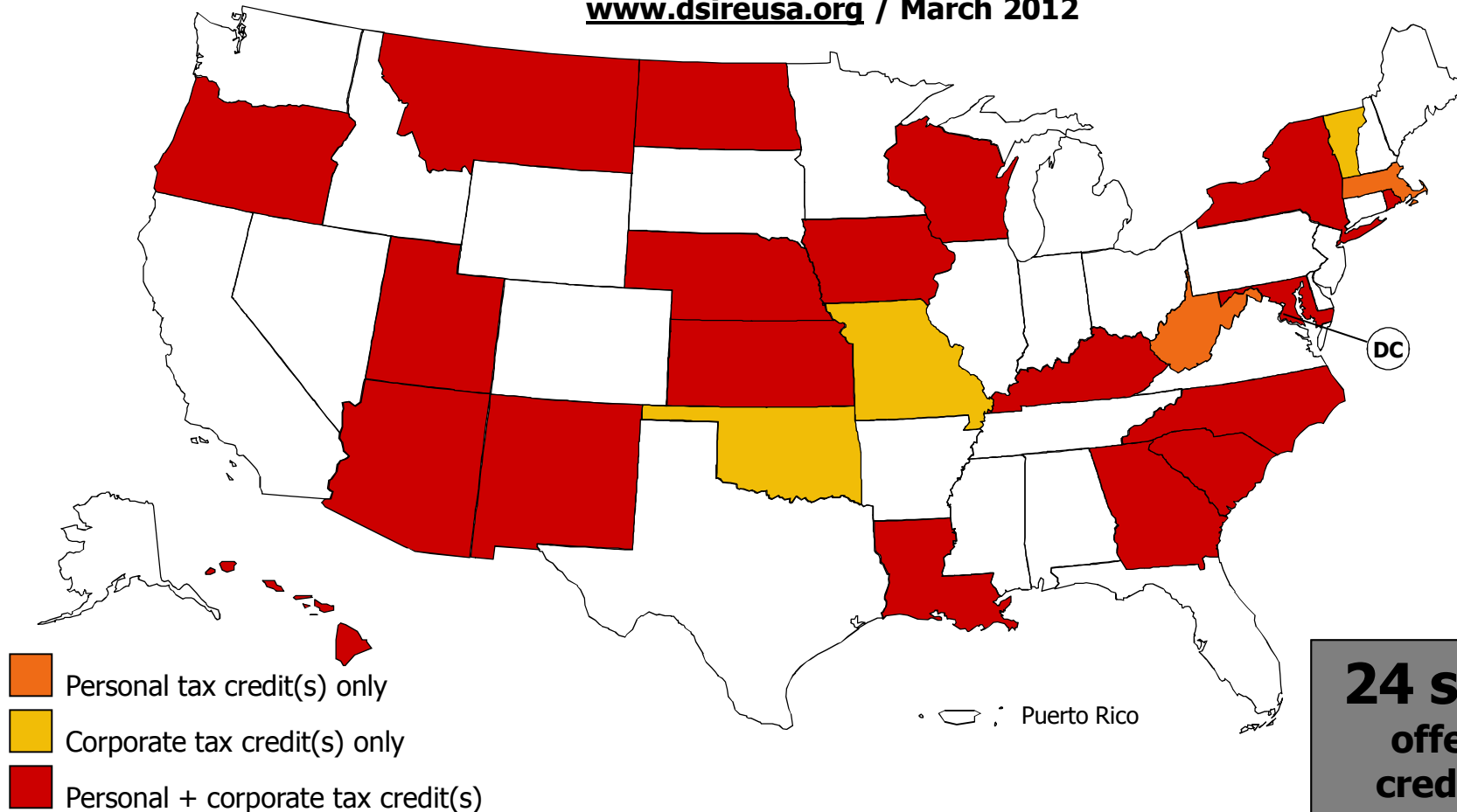
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## Tax Credits for Renewables

[www.dsireusa.org](http://www.dsireusa.org) / March 2012



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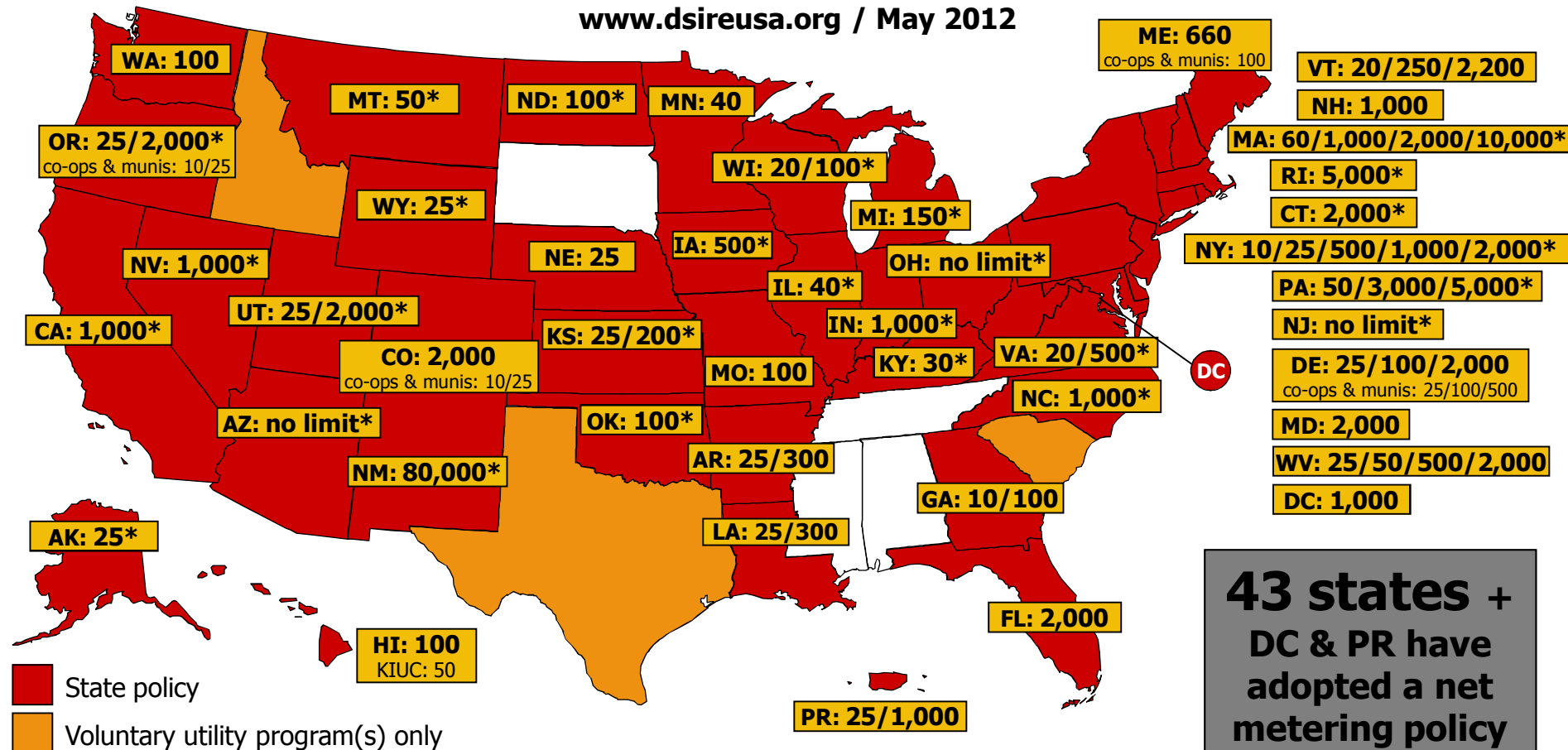
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## Net Metering

[www.dsireusa.org](http://www.dsireusa.org) / May 2012

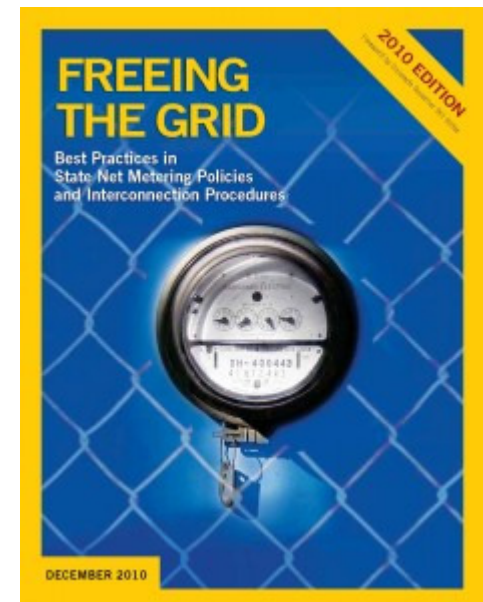


Note: Numbers indicate individual system capacity limit in kW. Some limits vary by customer type, technology and/or application. Other limits might also apply.

This map generally does not address statutory changes until administrative rules have been adopted to implement such changes.

# Net Metering

- Net metering: Allows for electricity to flow to and from the customer
- Not all policies are created equal
- In some cases local governments are permitted to use arrangements not available to other customers (e.g., meter aggregation).



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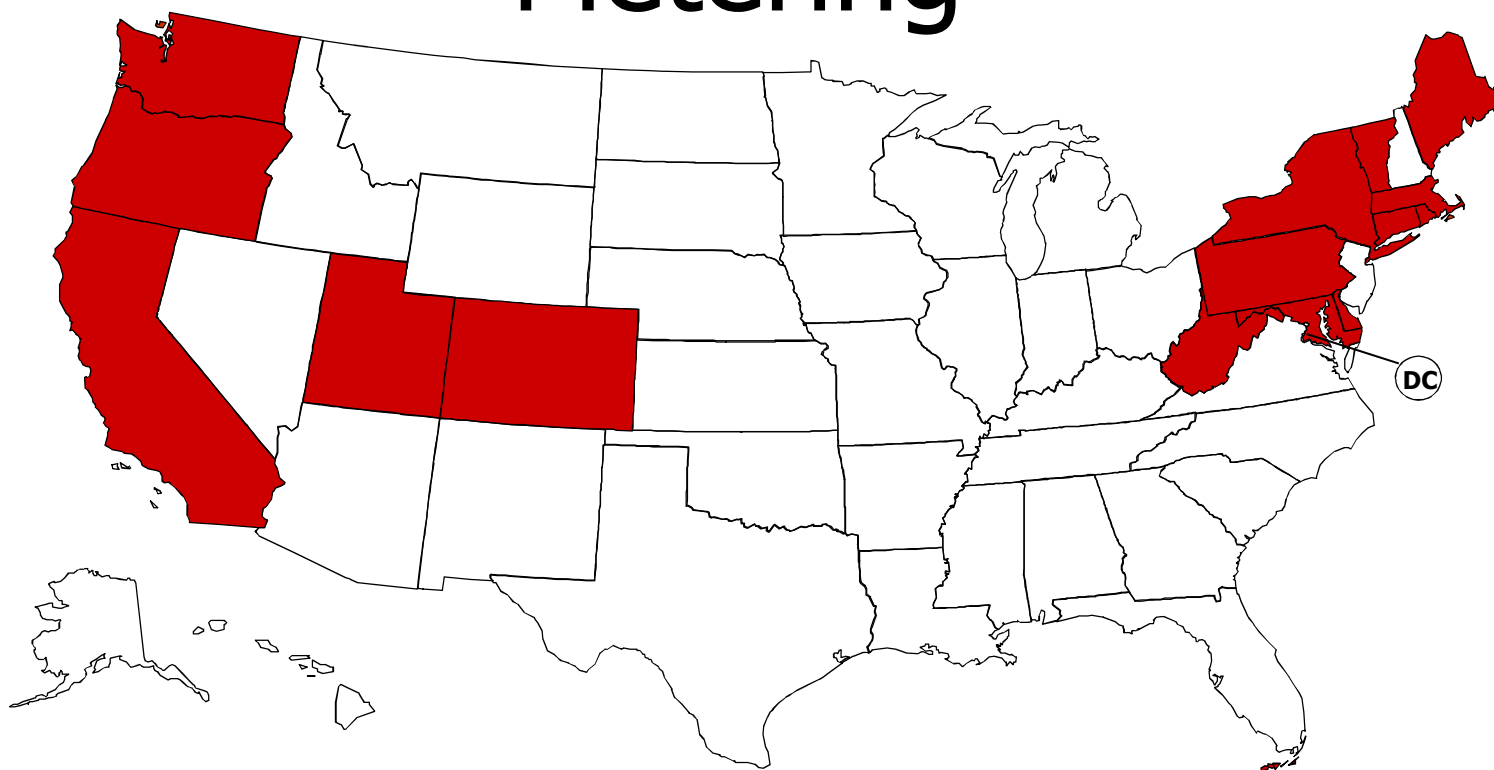
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# Meter Aggregation/Virtual Net Metering



 Aggregation of some from authorized by state

## Variations

- Ownership requirements
- Contiguous vs. non-contiguous properties
- Multiple customers
- Multiple generators
- Modified system/aggregate system size limits
- Rollover rates
- Distance limitations
- Number of accounts
- Addressing multiple tariffs

**(Almost) Universal  
Restriction: Accounts  
must be located in  
same utility service  
territory**

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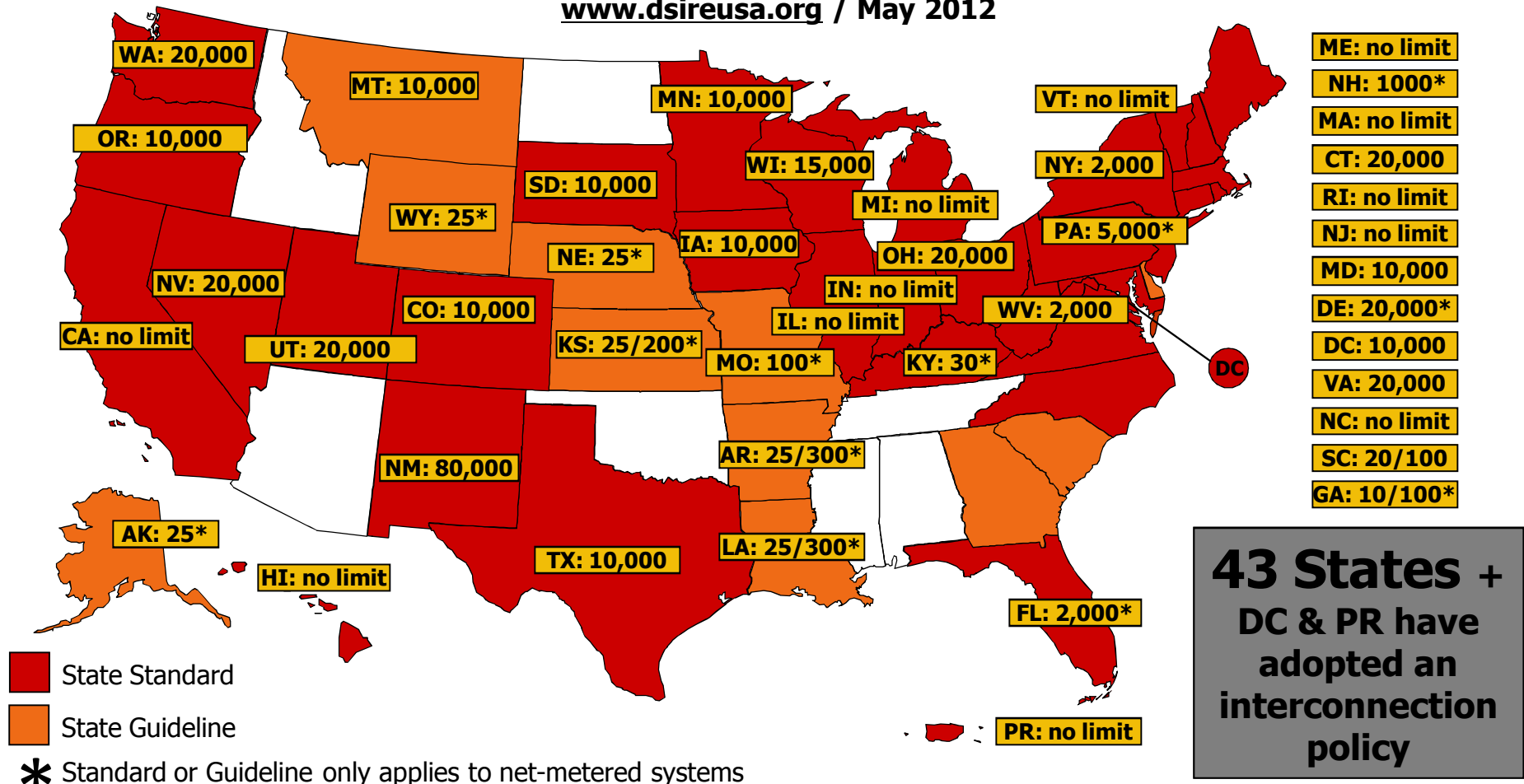
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## Interconnection Policies

[www.dsireusa.org](http://www.dsireusa.org) / May 2012



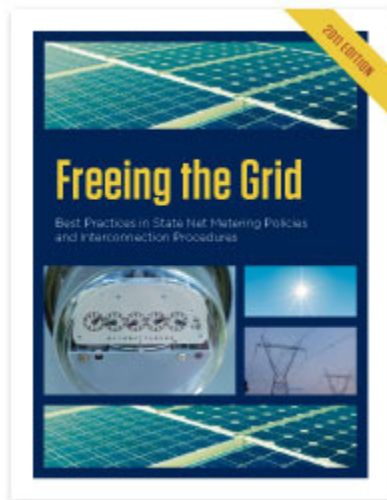
**Notes:** Numbers indicate system capacity limit in kW. Some state limits vary by customer type (e.g., residential/non-residential). "No limit" means that there is no stated maximum size for individual systems. Other limits may apply. Generally, state interconnection standards apply only to investor-owned utilities.

# Interconnection Standards

Interconnection refers to the issues that must be settled between the system owner and the utility and local permitting authorities before the system is connected to the grid.

1. Technical – safety, power quality, system impacts
2. Contractual – legal and procedural issues
3. Rates, fees and metering issues

# Interconnection and Net Metering – Grading the States



*Freeing the Grid*, published by the Network for New Energy Choices, creates an easily identifiable grading system for state policies

**Best policies in net metering adopted by CO, AZ, DE, CA, NJ, OR, PA, UT, CT, MD, OH, WV, FL, VT, MA, MI. Best policies in interconnection adopted by DE, ME, MA, VA, UT. \***

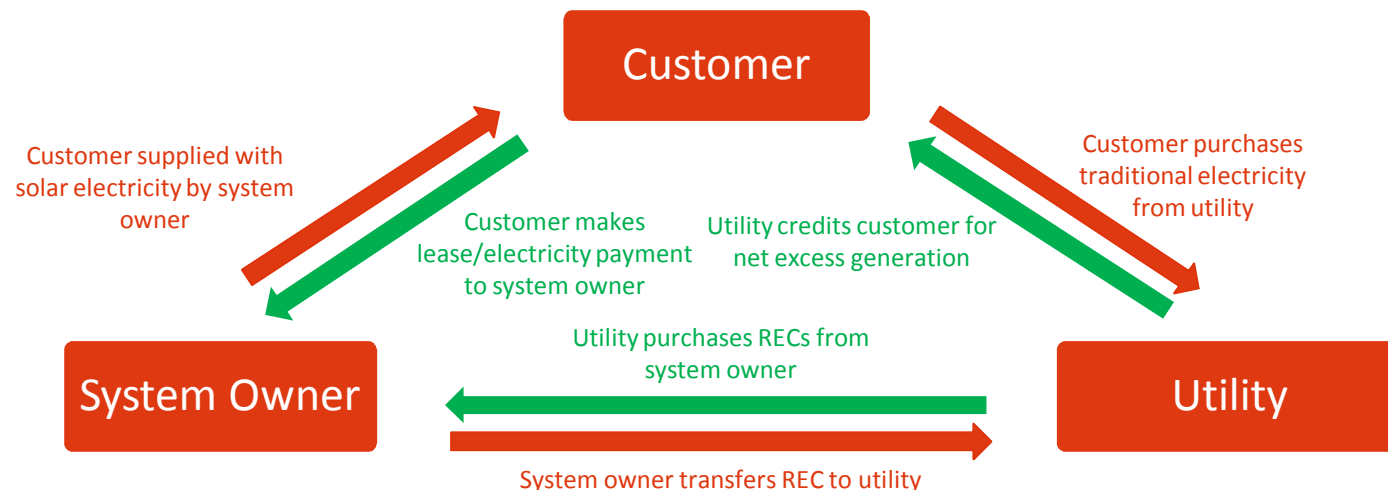
IREC model: <http://irecusa.org/irec-programs/publications-reports/>

*\*Graded "A" in Freeing the Grid 2011: <http://www.newenergychoices.org/uploads/FreeingTheGrid2011.pdf>*

## Financing Options

- Loans
- Retail (3<sup>rd</sup> Party) PPAs and Leases
- On-bill Financing
- PACE Financing

# Third-Party Ownership Options



- Solar power developer finances, owns and operates the system
- Customer receives benefits of on-site electric generation (i.e., lower electric bill) and compensates the owner through electricity purchases or lease payments
- Benefits: Tax incentive utilization, up-front costs reduced/eliminated, lower “hassle factor”
- Property leases are a distinctly different option.

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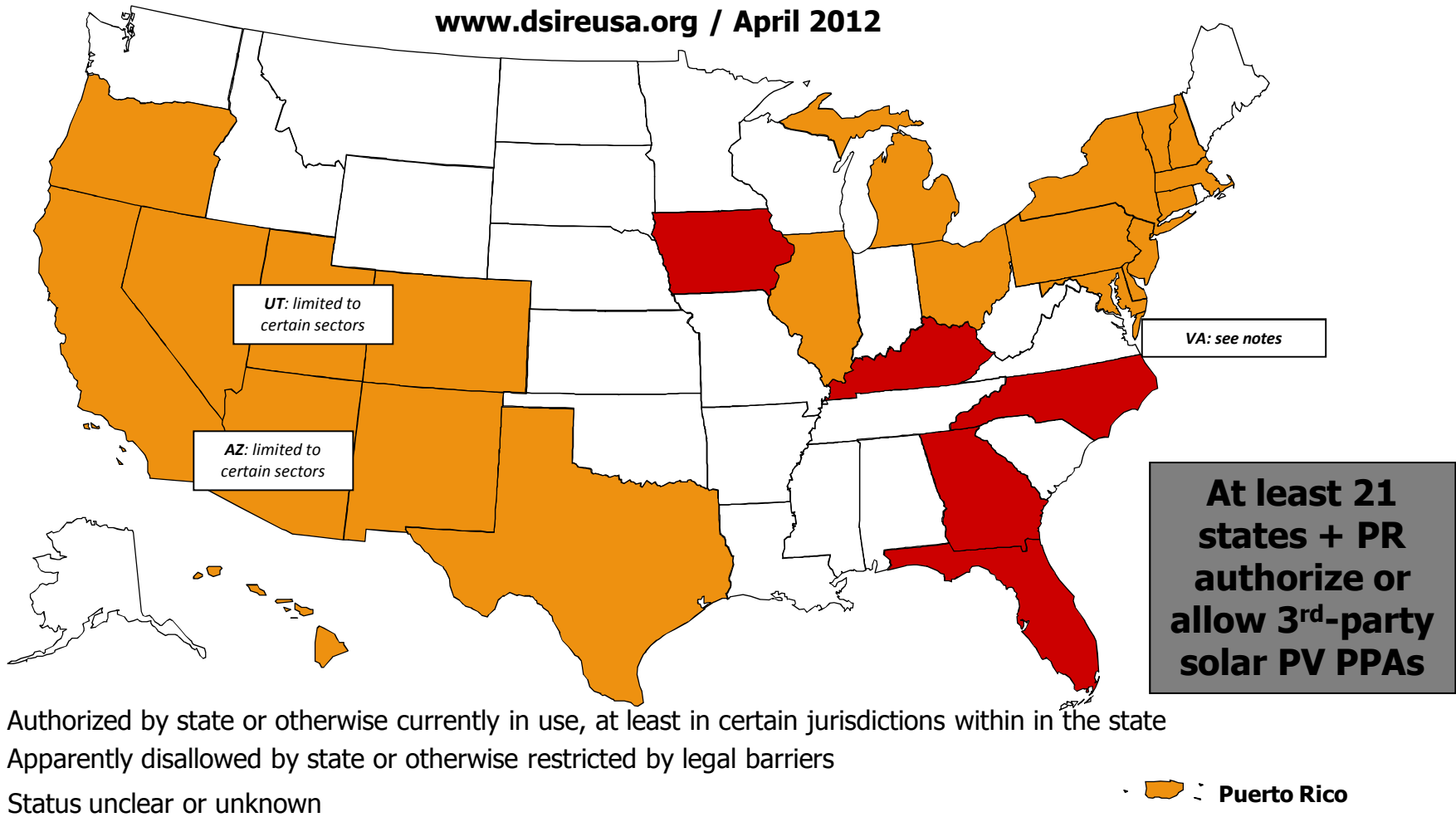
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## 3<sup>rd</sup>-Party Solar PV Power Purchase Agreements (PPAs)

[www.dsireusa.org](http://www.dsireusa.org) / April 2012



*Note: This map is intended to serve as an unofficial guide; it does not constitute legal advice. Seek qualified legal expertise before making binding financial decisions related to a 3<sup>rd</sup>-party PPA. See following slides for additional important information and authority references.*

# Conclusions

- Variety of regulatory and financial policies impact renewable energy installations
- Federal – primarily tax incentives
- State – historically tax credits and rebates, now focus on things like performance-based incentives, PPAs, PACE financing
- Utility – rebates and loans
- Local gov'ts/nonprofits have additional considerations

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# Questions?

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